 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Explain how an electric motor raising a weight is doing work.



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| --- | --- | --- | --- | --- |
| Know | |  | Apply  2  1 | |
| Ideas | |  |  |  |
| K1 | Work is done and energy transferred when a force moves an object. The bigger the force or distance, the greater the work. Machines make work easier by reducing the force needed. Levers and pulleys do this by increasing the distance moved, and wheels reduce friction. |  | A1 | Draw a diagram to explain how a lever makes a job easier. |
| A2 | Compare the work needed to move objects different distances. |
|  |  |
|  | |  | A3 |  |
| Key words | |
| K2 | **Work:** The transfer of energy when a force moves an object, in joules. |  |  |  |
| K3 | **Lever:** A type of machine which is a rigid bar that pivots about a point. |  |  |  |
| K4 | **Input force:** The force you apply to a machine. |  | A4 |  |
|  | **Output force:** The force that is applied to the object moved by the machine. |  |  |  |
| K5  K6 | **Displacement:** The distance an object moves from its original position. |  |  |  |
| K7 | **Deformation:** When an elastic object is stretched or squashed, which requires work. |  |  |  |
| 3 | Extend |  |  |  |
| E1 | Use the formula: work done (J) = force (N) x distance moved (m) to compare energy transferred for objects moving horizontally. |  |  |  |
| E2 | Compare and contrast the advantages of different levers in terms of the forces needed and distance moved. |  |  |  |
| E3 |  |  |  |  |
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|  |  |  |  |  |
| E4 |  |  |  |  |
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